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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,327	09/23/2003	Chao-Cheng Lee	REAP0004USA	2326
27765	7590	10/21/2004	EXAMINER	
NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE) P.O. BOX 506 MERRIFIELD, VA 22116			LAM, TUAN THIEU	
			ART UNIT	PAPER NUMBER
			2816	
DATE MAILED: 10/21/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/605,327

Applicant(s)

LEE ET AL.

Examiner

Tuan T. Lam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This is a response to the amendment filed 9/10/2003. Claims 1-22 are pending and are under examination.

#### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitations of first and second impedance to be capacitors, inductors as called for in claims 16 and 17 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 16-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In this instant, the specification, as originally filed, has failed to describe the first and second impedance to be capacitors, inductors as called for in claims 16 and 17, respectively.

3. Claims 18-19 and 21-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In this instant, the specification has failed to describe as to **how the operating frequency of the impedance circuit is determined**. Therefore, the limitations of the frequency of continuously turning on and off of the first and second switches is higher than or at least ten times of **an operating frequency of the impedance circuit** as called for in claims 18, 19, 21 and 22 are rejected under 35USC 112, first paragraph as being non-enabled.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-11 remain rejected under 35 U.S.C. 102(b) as being anticipated by Kothandaraman et al. (USP 6,147,520). Figure 2 of Kothandaraman et al. shows an impedance circuit for providing an equivalent impedance between a first node and second node (219, 221) comprising a first impedance (204, 205), a first switch element (211, 212, 213, 214), a second impedance (208, 209), a second switch element (215-218), wherein the equivalent impedance is determined by the first impedance value and the second impedance value through controlling the turn on time and the turn off time of the first switch element and the second switch element (column 2, lines 54-67, column 3, lines 1-45) as called for in claims 1-2 and 5-11.

Regarding claim 3, the control circuit (not shown) for generating control signals 221 and 223, the first control signal 221 turns on and off the first switch element (211-214), the second control signal 223 turns on and off the second switch element (215-218).

Regarding claim 4, the equivalent impedance is determined by controlling the duty cycle of the first control signal and the second control signal (column 2, lines 54-67, column 3, lines 1-45).

3. Claim 12 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese reference (JP 5-347520), prior art of record. Figure 1 of Yu et al. shows an impedance circuit for providing an equivalent impedance between a first node and a second node comprising a first capacitor (C1), a first switch (sw22), a second impedance (C2), a second switch element (SW23), since JP 5-347520 reference has similar structure therefore it is capable of providing the equivalent impedance which is determined by continuously turning on and off of the first switch

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element, and continuously turning on and off of the second switch as called for in claims 12 and 16.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 12-15 and 20-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Yu et al. (2002/0180507), prior art of record. Figure 4 of Yu et al. shows an impedance circuit for providing an equivalent impedance between a first node (in1) and a second node (N1) comprising a first impedance (R(0,1)), a first switch (S(1,0)), a second impedance (R(1,1)), a second switch element (S(1,1)), since Yu et al.'s reference has similar structure therefore it is capable of providing the equivalent impedance which is determined by continuously turning on and off of the first switch element, and continuously turning on and off of the second switch as called for in claims 12-15.

Regarding claims 18-19 and 21-22, since Yu et al.'s reference has similar structure as of claims 12 and 20, therefore it is capable of operating with the frequency of turning on and off of the first and second switches with a frequency higher/10 times higher than the operating frequency of the equivalent circuit.

Regarding claim 20, since Yu et al.'s reference has similar structure as of the present invention, therefore it is capable of providing an equivalent impedance through controlling the turning on and off of the first and second switches.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al. (USP 20020180507). Figure 4 of Yu et al. shows an impedance circuit for providing an equivalent impedance between a first node (in1) and a second node (N1) comprising a first impedance (R(0,1)), a first switch (S(1,0)), a second impedance (R(1,1)), a second switch element (S(1,1)), since Yu et al.'s reference has similar structure therefore it is capable of providing the equivalent impedance which is determined by continuously turning on and off of the first switch element, and continuously turning on and off of the second switch. The differences seen between Yu et al. and the present invention is that the reference invention use inductors instead of resistors. However, one skilled in the art can recognize that the resistors of Japanese reference can be substituted with inductors. The substitution will provide an inductive equivalent circuit instead of resistive equivalent circuit. Therefore, outside of any non-obvious results the obviousness of using inductors over resistors will not be patentable under 35USC 103(a).

***Response to Arguments***

7. Applicant's arguments filed 9/10/2004 have been fully considered but they are not persuasive. Applicant argues that claim 1 recites the impedance circuit controls the equivalent impedance value through controlling the turn on time and the turn off time of the first and second switches. In this way, for each particular impedance value, the open and closed status of the first and second switch element is constantly changed is not persuasive. The limitation of having the switches status (on/off) constantly changed is not in the claim. The recited limitations in claims are fully anticipated by Kothandaraman et al. Furthermore, for the sake of argument, the switches (211-218) status (on/off) of Lothandaraman et al. are constantly changed in according to the dynamically monitored resistance value across bond pads 219-220. Therefore, claims 1-11 remains rejected under 35USC 102(b) as being anticipated by Kothandaraman et al.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period



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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T. Lam whose telephone number is 571-272-1744. The examiner can normally be reached on Monday to Friday (7:30 am to 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TIMOTHY P CALLAHAN can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR1) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tuan T. Lam  
Primary Examiner  
Art Unit 2816

10/19/2004